FINAL

LIGHTING STUDY
EEAP PROGRAM
FOR
LETTERKENNY
ARMY DEPOT

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ENTECH ENGINEERING, INC.

READING, PENNSYLVANIA

VOLUME 1 OF 3

SEPT ~~JUNE~~ 1995

DEPARTMENT OF THE ARMY
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LETTERKENNY ARMY DEPOT
ENERGY ANALYSIS

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1.0 EXECUTIVE SUMMARY

1.1 Project Authorization and Objectives

This project was authorized under the general provisions of Executive Order 12902 with specific implementation under the Army's Energy Engineering Analysis Program (EEAP). Entech Engineering, Inc. was commissioned under Contract DACA01-94-D-0037, Delivery Order 0004 issued by USAED, Mobile and Administered by USAED, Norfolk (Mlecik). The objectives of the project are to research, identify, evaluate, and define energy saving projects that meet the Army's criteria and lead to energy savings at the Letterkenny Depot with respect to lighting. Details of the authorization and objectives of this report, which delineates our contractual arrangement with the government, may be found in Section 9.1.

1.2 Synopsis of Findings

Entech Engineering, Inc. surveyed over 2 million square feet of lighting in defined areas of seventy-two buildings along with the roadway and parking lot areas. Overall, we considered over 14,000 luminaires with an annual estimated operating cost of $330,000. Entech prepared documentation for seventeen (17) Energy Saving Opportunities (ECOs) complete with cost estimates and life cycle cost analysis.

Eight (8) ECO projects are recommended with a total implementation cost of approximately $1,000,000 and an energy savings of 7,300 mmBtu (2,100,000 kWh). The recommended ECOs are listed in Table 1.2.1.

Table 1.2.1
Recommended ECO's
Letterkenny Army Depot

ECO No.	ECO Description	Implementation Cost $	Energy Savings mmBtu	LCCID Simple Payback (Yrs)	LCCID SIR	1st Yr $ Savings
ECO-2	Incandescent Exit Signs to LED Exit Signs	$6,400	61.2	3.03	5.74	2,225
ECO-3	Incandescent Area Light over Paper Exit Sign	$4,600	88.3	1.83	9.54	2,652
ECO-4B	Incandescent Area Lighting Fixture Replacement	$24,000	254.5	2.75	6.33	9,150
ECO-5	HID Lighting	$41,000	531.4	2.88	6.06	14,763
ECO-6	Efficient Fluorescent Lighting Retrofit	$628,000	4607	9.92	1.78	66,493
ECO-11	Industrial Fluorescent to High Pressure Sodium	$261,000	1554	8.83	1.99	30,988
ECO-12	Occupancy Sensors	$2,900	56.9	7.19	2.45	426
ECO-15	Building Exterior Lighting	$7,000	102.4	2.14	8.13	3,444
Total		$1,000,000	[redacted]			[redacted]

7,300

130,141

1-2

23-May-95

1.3 Organization of Report

The report consist of three (3) volumes:

Volume 1

Section 1	Executive Summary
Section 2	Methodology
Section 3	Facility Description
Section 4	Billing History
Section 5	Energy Calculations
Section 6	Energy Conservation Opportunities
Section 7	Operation and Maintenance Practices
Section 8	Conclusion

Volume 2

Section 9	Attachments

Volume 3

Section 10	Lighting Survey Field Data